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ABSTRACT

This experience-based career education cross-reference catalog for mathematics is one of four volumes designed to assist learning coordinators (teachers or work experience instructors) in developing individualized activity sheets for mildly mentally disabled secondary students. Each volume contains a listing of concepts, sub-concepts, interest areas, instructional objectives, on-site and learning-center resources needed, and learning activities. (Subjects of the other three catalogs are personal/social skills [CE 019 711], career education [CE 019 713], and English/communications [CE 019 714]. A description of the project that produced these materials is available in the final report [CE 019 710].) (JH)

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ED 165 000

EXPERIENCE BASED CAREER EDUCATION FOR MILDLY MENTALLY DISABLED

MATH CROSS REFERENCE CATALOG

Disseminated with the support and research funds of:

CONDUCTOR OF EXEMPLARY GRANTS
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Under Supervision of
Iowa Central Community College
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Fort Dodge, Iowa 50501

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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PREFACE

Iowa Central Community College (Merged Area V) was the recipient of a Part D Vocational Education Grant to develop, establish and operate model vocational educational programs. The programs were for cooperating secondary schools utilizing the Experience Based Career Education project (Appalachia Educational Laboratory model) for fiscal years 1976-1979.

An additional exemplary project was initiated in March of 1977 as a jointly operated project with Arrowhead Area Education Agency 5 and Iowa Central Community College. The purpose of the new effort was to analyze the potential and demonstrate the components of the EBCE-AEL model for mildly mentally disabled students. The project EBCE-MD includes establishing the procedures, editing and rewriting component parts, developing experience sites, in-service training, implementation and evaluation of all phases.

The EBCE-MD project staff worked with learning coordinators at four different Area 5 community schools to pilot the project: Eagle Grove, Humboldt, Pocahontas, and Storm Lake. Based on the pilot project for the mentally disabled, the present state strategy emerges. In a three year plan, from 1978 to 1981, the EBCE-MD project, training, and materials will be presented as a state strategy to all fifteen Area Education Agencies of Iowa. A framework will be established so that a model project can be established in at least one community in each of those fifteen AEA's. Instructional personnel from each AEA will be trained to continue the project on their own.

This Cross Reference Catalog was developed as a part of the responsibility of project participants and staff to provide visibility to the findings and accomplishments of the project. The concepts, sub-concepts and interest areas of EBCE curriculum are listed in this catalog with suggested activities for implementation. As teachers or Work Experience Instructors become Learning Coordinators in the EBCE-MD project, they will discover the need for materials to help initiate programs, services, and activities for their students.

EBCE-MD involves experiential learning...student exploration of mathematics, English communications, personal/social skills and career skills...in the workplace! With careful organization and use of provided materials, a Learning Coordinator can offer a unique learning situation to a special group of students.

ACKNOWLEDGEMENTS

This document is a pilot test adaptation of the Math Cross Reference Catalog produced by the Experiential Education Division of the Appalachia Educational Laboratory (AEL) in Charleston, West Virginia. The AEL version, on which this cross reference catalog is based, is used in the Experience Based Career Education (EBCE) program which AEL has implemented in over 20 states in the nation.

Iowa Central Community College and cooperating sponsor Arrowhead Area Education Agency 5 of Fort Dodge, Iowa, gratefully acknowledge the cooperation of the AEL. In particular, we recognize the work of Phyllis Kessel for the adaptation of this document. Ms. Kessel, an Educational Development Specialist at AEL, provided on-site assistance to the local revision team.

The local revision team is to be commended:

Norm Silbaugh, Drake University
Sherri Forbes, AEA 5 Learning Coordinator and EBCE-MD Technical Assistant

We also acknowledge the extensive cooperation of the Special Needs and Special Education Division of the Department of Public Instruction, particularly Ray Morley, Consultant for Vocationally Handicapped; Dan Kroloff, Chief of Special Needs; Merry Maitre, Consultant in Mental Disabilities.

Special thanks to Dr. Carl H. Larson, Project Director, Marvin Lewis, Project Advisor from AEA 5, Dr. Jack Sanders, AEL, Quentin Weidner, ICCC EBCE Part D Director, and Jan McMahill, Program and Training Coordinator.

Typing credits to Betty Baldwin, Judy Cosgrove, and Dolores Gregerson of ICCC. Tim Hanneman proofread the copy and Dan Fowler of AEA 5 Media Center printed the final edition.

INTRODUCTION

The CROSS REFERENCE CATALOG (CRC) is a guide to help the Learning Coordinator (LC) develop individualized activity sheets for each student. It provides the link between the student's objectives (laid out in the Student Program Guide.) By investigating the student's objectives in the CRC, the LC and student can determine some possible learning activities and resources--in the learning center or community--for the development of Activity Sheets.

The learning activities recorded in the CRC are points of departure for students and LCs preparing activity sheets. It is expected that students and LCs would modify the suggested activities to accommodate their own needs, interests, and aptitudes. It should also be noted that the CRC suggests general activities. Thus, students and LCs will develop specific activities or inquiry steps according to the student's individual needs.

There are four (4) volumes of the CRC: Career Education (CE), English Communications (EC), Personal/Social Skills (PS), and Mathematics (MA). Each volume contains a listing of concepts, interest areas and instructional objectives, as well as recources (learning center and community), and learning activities that can be used with mildly mentally disabled secondary students. The interest areas and related instructional objectives are the focus for the suggested resources and learning activities. The objectives and learning activities are not intended to specifically identify the terminal behavior, nor the level of achievement to be attained by the student. Rather, they are to suggest a general objective and plan around which the LC and student can develop specific objectives and learning activities as they relate to each student's needs, interests, and abilities. This approach was taken in order to allow for total personalization of each student's program.

A blank form has been included in the back of each CRC so that LCs may add new sample activities and new local resources to those now listed in the Catalog. The blank form should be used as a "master" from which other blank pages are reproduced as needed. New activities and local resources are written on the forms which are then inserted by "interest area" behind the appropriate page (s) in the CRC.

SUBJECT Mathematics

CONCEPT MA 1.0.0: Computation

SUBCONCEPT MA 1.1.0: Properties and Operations of Whole Numbers

INTEREST AREA MA 1.1.1: What are the basic facts of addition and subtraction?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will subtract 1, 2 and 3 digit numbers, with and without borrowing. The student will add 1, 2 and 3 digit numbers, with and without carrying.	Student/teacher prepared material	X		- Given a set of 20 subtraction examples, with no more than three digits in each number and with zeros randomly placed in the greater number; the student can write the difference. This will give the student review of the basics of subtraction.
			X	- Using various formats (i.e. 3 + 1 = 4 and $\begin{array}{r} 3 \\ +1 \\ \hline 4 \end{array}$) the student will write, along with the LC, subtraction and addition problems that the student is confronted with on the job site. For example, the student may figure how many hours (in whole hours) he works per week, how many miles he travels to work per week, etc.
	Mathematics for Employment Part I - pp. 1 - 80 Mafex Associates, Inc. 90 Cherry Street Johnstown, Pennsylvania 15902	X		

SUBJECT Mathematics CONCEPT MA 1.0.0: Computation

SUBCONCEPT MA 1.1.0: Properties and Operations of Whole Numbers INTEREST AREA MA 1.1.2: What are the basic facts of multiplication and division?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will compute problems in multiplication using 1, 2 and 3 digit numbers (with and without carrying). The student will compute problems in division using 1, 2 and 3 digit numbers (without remainders).	Student/teacher prepared material	X		- Given 60 division facts having productivity of 81 or less, the student can write the missing factor (quotient). This will give the student review of the basics of division.
			X	- Given a series of problems from the job site (days per week/month/year worked, how many miles traveled to work per week/month/year) the student will solve the problems.
		X		- The student will complete a multiplication table.
	Mathematics for Employment Part I - pp. 1 - 80 Mafex Associates, Inc. 90 Cherry Street Johnstown, Pennsylvania	X		

SUBJECT Mathematics

CONCEPT MA 1.0.0: Computation

SUBCONCEPT MA 1.1.0: Properties and Operations of Whole Numbers

INTEREST AREA MA 1.1.3: How does one use addition and subtraction to solve a problem?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will define when addition is applicable to a situation. The student will define when subtraction is applicable to a situation.	Teacher-prepared material		X	- Given data derived from the work site and the answer to a problem, the student will discuss with the LC how the answer was obtained (subtraction or addition) and why that particular process was used over the other.
			X	- Given incomplete problems (without + or - signs) the student will fill in the blanks. Example: 342 (?) 40 = 302.
		X		- Student discusses with the LC what each process finds out about numbers.

SUBJECT Mathematics

CONCEPT MA 1.0.0: Computation

SUBCONCEPT MA 1.1.0: Properties and Operations of Whole Numbers

INTEREST AREA MA 1.1.4: How does one use multiplication and division to solve a problem?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will compute a problem using multiplication.	Student/teacher prepared material		X	- The student will, using salary information from the job site, compute the total amount of money obtained in a day, month, year, or compute the cost of his/her housing for a year.
The student will explain the kind of information that is obtained using multiplication.		X		- The student will discuss with the LC in what situations multiplication is applicable.
The student will compute a problem using division.			X	- The student will compute, using division, how much he/she could budget toward certain items to be purchased in the future (i.e. 1/3 of salary in savings for a car, etc.).
The student will explain what information is obtained when using division.		X		- The student will, in discussion with the LC, explain when division is applicable to certain situations.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computation

SUBCONCEPT MA 1.1.0: Properties and Operations of Whole Numbers INTEREST AREA MA 1.1.5: How does one use addition and subtraction to solve problems when using decimal numbers?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will solve addition and subtraction problems when using decimal numbers.	Experience Sites		X	- The student will, with the help of an RP, solve various problems in addition and subtraction when using decimal numbers, such as dollars and cents, measurements, etc.
The student will define decimal numbers. The student will compute the conversion from fractions to decimals.	Teacher-prepared materials	X		- In discussion with the LC, the student will list and define some characteristics of decimal numbers, (i.e. fractions and mixed fractions with denominator of 10 or 100 may be written as decimals ($\frac{5}{10}$ = .5, $\frac{3}{100}$ = .03, and $4\frac{17}{100}$ = 4.17) and the decimal point separates numerals naming whole numbers, from those naming numbers less than one).
			X	- The student will convert fractions to decimals using the hours and wages paid to co-workers at the work site. Example: $2.50 per hour for five hours converts to $2 1/2 for the same period of time.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computation

SUBCONCEPT MA 1.1.0: Properties and Operations of Whole Numbers INTEREST AREA MA 1.1.6: How does one use multiplication and division when using decimal numbers?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will solve multiplication problems using decimal numbers.	Teacher-prepared material		X	- The student, in conjunction with the LC, will use information from the job site (hours, wages, withholding) to multiply decimal numbers.
The student will solve division problems using decimal numbers.		X		- Using answers from activity #1, the LC will show the student the convertability of multiplication and division by reversing the process.

SUBJECT Mathematics

CONCEPT MA 1.0.0: Computation

SUBCONCEPT MA 1.1.0: Properties and Operations of Whole Numbers

INTEREST AREA MA 1.1.7: How does one round off whole numbers?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will be able to round off whole numbers.	Farm-Plant population per row of corn.		X	- The student, with the aid of an RP, will round off 25 numbers which are less than 10,000 to the nearest thousand.
		X		- The student will locate the town population index in an atlas and round off to the nearest hundred 30 city population numbers.
		X		- The student will round off the average income of members of a student-chosen occupation to the nearest ten.
			X	- LC, RP and student could practice determining the amount of sales tax to be applied to a purchase.
	Macmillan Mathematics pp. 10 and 11 Macmillan Publishing Co., Inc. New York, New York	X		This resource will give the student a reference for rounding off numbers.

SUBJECT Mathematics

CONCEPT MA 1.0.0: Computation

SUBCONCEPT MA 1.1.0: Properties and Operation of Whole Numbers

INTEREST AREA MA 1.1.8: How does one use a calculator or an adding machine?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will figure specified problems using a calculator, or adding machine. The student will manipulate the calculator. The student will manipulate the adding machine.	Business Sites Game Book (from most book stores)	 X	X X X	- The student will, with the aid of an RP, figure basic math problems, using a calculator, or an adding machine. - With the use of Calculator Game Books, the student will become familiar with the machine while having some fun. - If an adding machine is used on the job site, the student will use the machine on a task provided by the RP using some non-threatening information (example: refiguring the previous week's payroll). - The RP will demonstrate how the calculator is used to extend prices on an inventory list.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computation

SUBCONCEPT MA 1.2.0: Properties and Operations of positive and negative rational numbers. INTEREST AREA MA 1.2.1: What are fractions?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will identify a fraction as part of a whole	Fractions of a section of a township in a rural area.		X	-The student, with the aid of an RP, will locate shaded areas of circles and label the area as 1/2, 1/3, 1/4, 1/8, 2/3, or 3/4.
		X		-The student will identify a fraction as it relates to money (1/4 of $1.00, 1/5 of $1.00, 1/2 of 10¢, etc.)
			X	-The student will observe the physical descriptions of co-workers to note how many are men/women, how many have dark hair, etc. The LC will assist the student in converting the collected data into fractions. This serves to introduce the function of the numerator and the denominator of a fraction.
	Introduction to Arithmetic Cambridge Book Co. 488 Madison Avenue New York, NY 10022	X		This resource will give the student a technique for determining fractions as part of a whole.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computations

SUBCONCEPT MA 1.2.0: Properties and Operations of positive and negative rational numbers. INTEREST AREA MA 1.2.2: How does one add and subtract fractions having the same denominator?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will add and subtract fractions having the same denominator.	Classroom	X		- The student, with the aid of an RP, will determine the common denominator, and then add and subtract them.
	Student-prepared material	X		- The student, along with the LC, will devise a card of rules concerning the adding and subtracting of fractions.
	Experience Site		X	- The student collects data from the site, i.e. how many rooms were cleaned, number of a specific item sold, color comparisons of a given item. In each situation, the student must also indicate the total number in the category. LC and student write fractions for the collected data, establish procedures, add or subtract to check the remaining fractional part.

SUBJECT Mathematics

CONCEPT MA 1.0.0: Computations

SUBCONCEPT MA 1.2.0: Properties and Operations of positive and negative rational numbers.

INTEREST AREA MA 1.2.3: How does one change fractions to higher or lower terms?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will change fractions to higher or lower terms. The student will be able to define equivalent fractions.	Educational site or in-house activity. Teacher-prepared material	X X X	X	-The student, with the aid of an RP, will figure fractions to higher or lower terms. -In discussion with the LC, the student outlines reasons why one should be able to change fractions to lower or higher terms (measurements could be used to introduce this concept). -The student designs his/her ideal house (complete with dimensions), and with LC discovers how to measure the exterior and interior square footage of proposed building. -The student is presented with fractions that can be converted to other forms (i.e. 4/5 is the same as 16/20).

SUBJECT Mathematics CONCEPT MA 1.0.0: Computations

SUBCONCEPT MA 1.2.0: Properties and Operations of positive and negative rational numbers. INTEREST AREA MA 1.2.5: How does one multiply fractional numbers?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will multiply fractional numbers with both common and uncommon denominators.	In class		X	-The student, with the aid of an RP, will multiply fractional numbers.
		X		-The student, given a problem of multiplying fractions with common denominators, will solve the problem as many ways as possible, using equivalent fractions, (i.e. 1/3 x 2/3 = 2/9, and 3/9 x 6/9 = 18/81 = 2/9).
		X		-The student, given a problem of multiplying fractions with uncommon denominators, will solve the problem in the same way as in activity #1.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computations

SUBCONCEPT MA 1.2.0: Properties and Operations of positive and negative rational numbers. INTEREST AREA MA 1.2.6: How does one divide fractional numbers?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will divide fractional numbers with both common and uncommon denominators.	Educational site or in-house activity		X	-The student, with the aid of an RP, will figure fractional numbers involving division.
	Teacher-prepared material	X		-Given a problem involving the division of fractions with common denominators, the student will develop a series or set of equivalent fractional problems that, when reduced, would have the same answer.
	Educational Site		X	-The RP and the student will review old attendance records for co-workers. The student and the LC/PR will use this data to determine the fractional part of time various co-workers were absent.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computations

SUBCONCEPT MA 1.2.0: Properties and Operation of Positive and Negative Rational Numbers INTEREST AREA MA 1.2.7: How does one compute the fractional cost of an item?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will compute the fractional cost of an item (1/2, 1/3, 1/4).	Lumber Yard Retail Stores		X	-The student, with the aid of an RP, will determine the cost of a bundle of shingles when given the variables such as cost per square, and number of bundles per square in composition shingles.
			X	-The student, given a restaurant check by the LC, will visit a local restaurant, write down a complete meal for four people (or 3 or 2 people) and then figure out how much each would pay.
			X	-The student, with the help of the LC, would figure out how much each would pay if he/she were on a dutch date.
			X	-The RP will demonstrate how the cost of a single item is determined if suggested retail prices are not provided.
	Mathematics In Living p. 8, 93-109 Fruitt Boulder, Colorado	X		This resource will show the student how to compute the fractional cost of an item.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computations

SUBCONCEPT MA 1.2.0: Properties and Operation of Positive and Negative Rational Numbers INTEREST AREA MA 1.2.8: How does one compute the fractional cost of an item to the nearest whole cent?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will compute the fractional cost of an item to the nearest whole cent.	All Sites		X	-The student will, with the aid of an RP, compute the cost of an item when it is computed at $3.862 per item.
The student will compute the cost, per unit, to remodel a house.	Student-prepared material		X	-The student will seek out the cost of a package of floor tiles (to remodel a kitchen) and determine the per unit cost for each tile.
			X	-The student will determine the cost, per square foot, to lay carpet in his bedroom.
The student will determine the mileage he/she gets in his/her own car (or family car) and figure the cost per mile for gasoline.	Gasoline Station		X	-The student obtains per gallon price of gasoline, figuring mileage in a car and determines cost per mile of driving.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computation

SUBCONCEPT MA 1.3.0: Properties and Operations of Real Numbers INTEREST AREA MA 1.3.1: How does one add, subtract, multiply and divide with decimal numbers?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will add using decimal numbers. The student will multiply using decimal numbers. The student will subtract using decimal numbers. The student will divide using decimal numbers.	Bank Retail Stores		X	-The student, with the aid of an RP, will figure problems in addition, subtraction, multiplication, and division with decimal numbers.
			X	-The student will add together the total cost of a new wardrobe or uniforms required to work at the site, using the local clothing store prices or using catalogues provided by the RP.
			X	-The student will, with the help of the RP, collect estimated monthly costs for operation of the site and figure out how much it costs to operate the business for one year.
			X	-The RP will assist the student in determining the quantity of a given item on hand by providing the total inventory cost and the cost of a single item. The student will divide to determine the correct answer.
			X	-The student will figure out the cost of lunch if four people went to lunch and received one tab.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computation

SUBCONCEPT MA 1.3.0: Properties and Operations of Real Numbers INTEREST AREA MA 1.3.2: How does one convert decimal numbers to fractions and vice versa?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will convert decimal numbers to fractions and vice versa.	Banks		X	-The student, with the aid of an RP, will convert ten interest rates written in decimal numbers to whole numbers and fractions when given the rates.
		X		-The student, along with the LC, will construct a bulletin board pin-up showing the relationship between decimal numbers and fractions (i.e. 1/2=50, 1/4=25, 3/4=75, etc.).
		X		-The student will round off baseball averages and convert them to fractions.
	Everyday Business pp. 30-31 Cal-Central Press Sacramento, California	X		This resource will give the student information needed to change decimal numbers to fractions and vice versa.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computations

SUBCONCEPT MA 1.4.0: Ratio/Proportion/ Percent INTEREST AREA MA 1.4.1: What do the terms percent and ratio mean?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will identify the meaning of percent and ratio. The student will define the meaning of percent. The student will define the meaning of ratio. The student will distinguish between the concepts of percent and ratio.	Banks		X	-The student will, with the aid of an RP, determine the meaning of percent and ratio and compute problems using percent and ratio.
			X	-The student will discuss with the LC the meaning of percents and how they are used. The student will determine what percentage of the time he/she is at the work site (in relationship to 24 hours).
		X		-The student will discuss with the LC the meaning of ratios and how they are used. The ratio of ingredients in a cake recipe or the ratio of men to women in certain cities could be used to illustrate ratios.
		X		-Given a percent, the student will express it as a ratio in lowest terms and vice versa.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computations

SUBCONCEPT MA 1.4.0: Ratio/Proportion/Percent INTEREST AREA MA 1.4.2: How does one convert percentages to decimals and vice versa?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will convert percentages to decimals and vice versa.	Banks		X	-The student, with the aid of an RP, will convert ten percentage figures to decimal numbers when given the percentages.
			X	-The student will locate the results of a survey or poll in the newspaper and convert those percentages to decimals.
		X		-The student will convert baseball decimals to percentages.
			X	-The LC and the student will design a questionnaire to assist in collecting data from RP concerning percentages, i.e. percent of waitresses, cooks or percent of men, women, age group percentages, percentages of workers with various kinds of education or previous experience. The LC and the student then will practice converting percents to decimals.
	Everyday Business pp. 30-31 Cal-Central Press Sacramento, California	X		This resource will give the student a method for converting percentage to decimal numbers.

SUBJECT Mathematics

CONCEPT MA 1.0.0: Computations

SUBCONCEPT MA 1.4.0: Ratio/Proportion/ Percent

INTEREST AREA MA 1.4.3: How does one convert percentages to fractions and vice versa?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will convert percentages to fractions and vice versa.	Banks		X	-The student, with the aid of an RP, will convert ten percentage figures to fractions when given the percentages.
			X	-The student will convert employment percentages in different job areas (found in statistical abstracts) into fractions.
		X		-The student will develop a reference card that shows the conversion from fractions to percentages.
			X	-Using percentage information collected from the RP concerning age groups, experience, education, etc.; the student will convert the collected percentages into fractions. (See Activity 1.4.2)
	Everyday Business pp. 30 - 31 Cal-Central Press Sacramento, California	X		This resource will give the student a method for converting percentages into fractions.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computations

SUBCONCEPT MA 1.4.0: Ratio/Proportion/ Percent INTEREST AREA MA 1.4.4: How does one compute percentages?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will correctly compute percentages of a given item.	Bank - Savings Account		X	-The student, with the aid of an RP, will compute the interest rate on the unpaid balance of a stereo when given the amount, the rate of interest, and the time period.
			X	-The student will compute the percentage of the time she/he is involved in daily activities (sleeping, dressing, eating, working, etc.).
		X		-The student will check the box scores of team-standings (won-loss records)of professional baseball teams.
			X	-The student will collect data from the site concerning total number of employees, previous attendance records for a given week for the total group, the given number of workers within an age group, etc. The LC and the student then will calculate the percentages to determine i.e. what percent of group was absent, is over 50, has had education beyond high school.
	Arithmetic That We Need pp. 31-32 Frank Richards Pub. Co. Phoenix, Arizona	X		This resource will give the student the correct method needed for computing percentages.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computation

SUBCONCEPT MA 1.5.0: Conversion Relations INTEREST AREA MA 1.5.1: How does one convert from Fahrenheit to Centigrade?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will convert from Fahrenheit to Centigrade.	Radio Station		X	-The student will, with the aid of an RP, convert Fahrenheit to Centigrade.
The student will measure the temperature on a Fahrenheit scale thermometer.	Science lab at school		X	-The student will record the experience site temperature each day for a week in Fahrenheit and compare the recorded temperatures to a Centigrade chart.
The student will measure the temperature on a Centigrade scale thermometer.		X		-The student will draw a thermometer that shows both the Fahrenheit and Centigrade temperature scales.
			X	-The student will collect data relating to temperature of grill, dish washer, tap water, deep-fat fryer, etc., and compare the Fahrenheit and Centigrade temperature readings.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computation

SUBCONCEPT MA 1.5.0: Conversion Relations INTEREST AREA MA 1.5.2: How does one convert from larger unit of measurement to a smaller one, and vice versa?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will convert from larger units of measurement to smaller units.	Classroom		X	-The student will, with the aid of an RP, convert larger units of measurements to smaller and vice versa.
The student will convert a large measure of length to a smaller measure of length.		X		-The student will convert a football field length from yards to feet to inches.
The student will convert a larger measure of time to a smaller measure of time.		X		-The student will convert a year from months to weeks to days to hours to minutes to seconds.
			X	-Using old time charts from the site, the student will convert hours to minutes and vice versa.

SUBJECT Mathematics CONCEPT MA 1.0.0: Computation

SUBCONCEPT MA 1.5.0: Conversion Relations INTEREST AREA MA 1.5.3: How does one solve problems about difference in time zones?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will determine differences in the time zones. The student will use a world map to analyze a problem concerning time zones.	T.V. Station	 X	X X	-The student will, with the aid of an RP, solve problems relating to differences in time zones. -The student will plan to place a phone call to a foreign city and must determine the time zone and compute the time. -The student will plan an imaginary round-the-world trip. The LC can point to a specific area on the globe, tell the student what the time is in that zone and have the student determine the time at home.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.1.0: Units of Measurement INTEREST AREA MA 2.1.1: What are the units of measure in the English system?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will identify the foot, the inch, the yard and the mile.	Classroom		X	-The student will discuss the functions of the English system with the LC and how they came to be used in this country.
The student will determine why these measures are being used in this country.	Library/classroom	X		-The student will do research into the origin of these measures and why metric measures are not in great use today in this country.
			X	-The student will interview the RP to determine units of measurement that are used at the site.
			X	-The student will ask the RP to discuss any personal preference for English or Metric measurement.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.1.0: Units of Measurement INTEREST AREA MA 2.1.2: What are some examples of units to measure length?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will determine the length of an area in yards.	Football field		X	-The student, with the aid of an RP, will measure the length of a football field and express the length in yards.
The student will determine the distance from one given point to another in miles	Communities along a highway		X	-The student will observe co-workers to determine when measurement in length is needed at the site.
			X	-The student will interview co-workers to determine how accurately all measurement must be done, i.e. to 1/16, 1/4, 1/8 inch.
The student will compute the length of material in inches.	Fabric Store		X	-The student will interview co-workers to establish personal preference for the English or Metric system of measurement.
The student will convert the scale of miles on a road map.	Educational site or short trip		X	-The student, with the aid of an RP, will determine the distance between two given communities by using the odometer on a car.
The student will compute the length of material in feet.	Lumber Yard		X	-The student, with the aid of an RP, will determine the length and width of fabric in inches to make a blouse.
			X	-The student, with the aid of an RP, will determine the distance on a road map by using the scale of miles.
			X	-The student, with the aid of an RP, will determine the various lengths of 2'x 4's in the yard in feet.
	Arithmetic We Need pp. 1-7 Frank Richards Pub. Co. Phoenix, Arizona	X		This resource will show the student how to properly determine distance in yards, miles, inches and feet.
	ARCO-High School Equivalency pp. 231-232 ARCO 219 Park Avenue South New York, NY 10003	X		This resource will aid the student in figuring miles traveled by using a scale of miles.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.1.0: Units of Measurement INTEREST AREA MA 2.1.3: Why is it important to read the proper units of measurement when taking medication?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will accurately read and determine the proper quantity or measurement when taking medication.	School Nurse Doctor's Office Drug Store		X	-The student will, with the aid of an RP, determine the proper amount of units of measurement when taking medication.
			X	-The student will, with the aid of the LC, describe the ill effects of prescription drug abuse.
The student will describe the dangers of taking medication in improper amounts.		X		-The student, given a syringe by the LC, will measure the amount of liquid in this medical apparatus.
The student will explain the meaning of CC.			X	-The student will obtain different sizes of vitamin C capsules (100mg, 250mg, 500mg, and 1000mg) and explain the meaning of this measure.
The student will explain the meaning of milligram and gram.			X	-The RP will explain the need for mental alertness and control while on the job, and demonstrate the dangers that will evolve if the employee is not performing to full capacity.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurements and Analysis

SUBCONCEPT MA 2.1.0: Units of Measurement INTEREST AREA MA 2.1.4: What are some examples of units to measure volume?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will convert liquid measures of pints to quarts, to gallons, to quarts, to pints.	Grocery store (milk)		X	-The student, with the aid of an RP, will determine how many pints and quarts are in a gallon, and what fraction of a gallon a pint and quart are, when given empty containers of each to be filled with water.
			X	-The student will convert commonly used volume measures to smaller units - a gallon of milk to pints, a gallon of gasoline to quarts, a quart of orange juice to cups, etc.
			X	-The RP will explain when measurement of volume is needed at the site and what units of measure are used.
	Arithmetic That We Need pp. 50-53 Frank Richards Pub. Co. Phoenix, Arizona	X		This resource will give the student correct methods for converting liquid measures from one unit to another.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.1.0: Units of Measurement INTEREST AREA MA 2.1.5: What are some units for measuring time, temperature and atmospheric pressure?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will measure temperature in Celsius and Fahrenheit.			X	-The student, with the aid of an RP, will take 12 readings of thermometer with a Fahrenheit scale and record the temperatures.
The student will measure time.			X	-The student will photograph/draw as many different kinds of clocks as possible and tell the time on them.
The student will measure the barometric pressure.			X	-The student will record the barometric pressure each day for a month. To help understand what the reading means, the student could keep a diary on the weather and then compare the readings to try to draw some generalizations about their relationship.
The student will accurately read a rain gauge.	Home Radio Weather Station TV Weather Station			
The student will identify Roman Numerals from 1 to 1,000.			X	-The student will examine books to determine that Roman Numerals are used to indicate the year.
			X	-The student, with the aid of an RP, would read the units of measurement when reading a rain guage determining the rainfall.
The student will describe and draw a clock face that uses Roman Numerals.		X		-After completing the recommended resource activities and given a duplicated Roman notation sequence of numerals from 1 to 1,000 from which there have been a minimum of ten random omissions, the student will supply the missing numerals by correctly writing them in their proper positions in the sequence.
The student will convert Roman Numerals into Hindu-Arabic Numerals and vice versa.				
			X	-The student searches out various clocks that are present in his home life, school life, or work life; and discusses with the LC at what times the student sees these clocks. The student will explain these times in Roman Numerals.

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SUBJECT _____ CONCEPT _____

SUBCONCEPT _____ INTEREST AREA MA 2.1.5: (Continued)

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
				(continued)
			X	-After obtaining some numbers from the work site (hours the student works, ages of co-workers, number of blocks to work, etc.), the student will supply a conversion chart on which both the Roman and Hindu-Arabic Numerals are expressed.
	Figure It Out p. 19 Follet Publishing Co. Chicago, Illinois	X		This resource will give the student a reference for measuring temperature.
	Arithmetic That We Need pp. 15-20 Frank Richards Publishing Co. Phoenix, Arizona	X		This resource will give the student the appropriate Roman Numerals for numbers 1 to 1,000.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.1.0: Units of Measurement INTEREST AREA MA 2.1.6: What are the comparable units of measure in the metric system?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will determine basic units of measurement in the metric system for tools.	Motorcycle Shop		X	-The student, with the aid of an RP, will list the sizes of the ten most commonly-used socket wrenches in metric measurement.
			X	-The RP will explain and demonstrate the differences between English and metric tools.
The student will determine units of measurement for volume in the metric system.	Auto Dealership		X	-The student, with the aid of an RP, will determine the amount of oil in the crankcase of a given car in liters.
	Websters New Collegiate Dictionary p. 530 G & C Merriam Co., Publishers Springfield, MA	X		This resource will give the student a reference for determining size in centimeters and volume in liters.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.1.0: Units of Measurement INTEREST AREA MA 2.1.7: What do the scientific units such as BTU, foot, lb., volt, watt, foot candle, and horsepower mean?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will identify basic scientific units.	Science classroom Electric system-home		X	-The student will, with the aid of an RP, define and learn basic scientific units and determine how they are used.
The student will explain in what areas of science these basic measures are used.		X		-The student, along with the LC, will discuss the relationship between the energy crisis and these measures; and what would happen to unemployment figures if the energy crisis becomes a reality.
			X	-The student will interpret the utility bills his/her family receives.
			X	-The student will interview the RP to determine if any energy saving steps have been initiated at the site. The LC and the student will develop the questionnaire prior to the interview.
			X	-The student will question RP as to the use of any of the above mentioned units of measure at the site.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.2.0: Measurement Tools and Techniques INTEREST AREA MA 2.2.1: How does one read measuring devices such as a ruler, clock, weighing scale, and calendar?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will identify the correct time in hours, minutes, and seconds.	Student's home (electric clocks)		X	-The student, with the aid of an RP, will identify the correct time to nearest hour, minute, and second in each of ten times the clocks are manually stopped for reading.
The student will identify the amount of time to the nearest hour, minute, and second between two given times.	All sites utilizing electric clocks.		X	-The RP will demonstrate how to read a time card as marked by a time clock.
			X	-The student, with the aid of an RP, will determine the length of time to the nearest hour, minute, and second, between two given times.
The student will distinguish between units of time, day, hour, minute, AM, PM.	Home-Work Site		X	-The student, with the aid of an RP, will determine the period of time either AM or PM.
			X	-The student, with the aid of an RP, will be able to write down the time at various times involving half hours.
The student will recognize half hours when reading the clock.	Home-Work Site		X	-The student can respond to what time it is, when at home or work - stress quarter hours.
			X	-The student, with the aid of an RP, will accurately measure for a cap and gown with the use of a measuring tape.
The student will determine quarter 'till and quarter after the hour.	Home-Work Site		X	-The student will list the types of measuring devices observed at the site and explain the need for each device.
The student will accurately measure for cap and gown.	Principal's office Educational site		X	-The student will interview the RP to determine how accurate each measurement must be, i.e. 1/76, 1/8 inch.
The student will become familiar with a calendar.	Calendar in the home		X	-The student will compare accuracy of measurement in the English system to the Metric system accuracy
			X	-Given a list of ten lengths of time, the student will convert each stated length of time to both the next lower and the next higher unit in days, weeks, months, years.
	(continued on next page)			

SUBJECT _____ CONCEPT _____

SUBCONCEPT _____ INTEREST AREA MA 2.2.1: (continued)

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
	(continued)			
	Arithmetic That We Need pp. 59-67 Frank Richards Pub. Co. Phoenix, Arizona	X		This resource will give the student the method of identifying time to the nearest hour, minute, and second.
	Mathematics Around Us pp. 115 and 116 Scott Tonesman & Co. Glenview, Illinois	X		This resource will give the student a reference for calendar periods of time.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.2.0: Measurement Tools and Techniques INTEREST AREA MA 2.2.2: What are the proper procedures in using a time clock, time card, etc.?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will use the proper procedures in reading and using a time clock and time card. The student will compute the amount of time worked using a time card. The student will explain the advantages of using a time clock on the work site.	All sites using time clocks Work site		X X X X	-The student will, with the help of an RP, properly read and use a time clock and time card while at the experience site. -On the job site, the student will refigure work hours from time cards on file (employee's name blocked out). -The student will, in discussion with the LC, explain why a time clock and time cards are used on the work site. -The RP will demonstrate what happens when the card is not properly inserted into the time clock.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.2.0: Measurement Tools and Techniques INTEREST AREA MA 2.2.3: How does one read a body thermometer?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will accurately read a body thermometer.	Hospital, nursing home, home		X	-The student, with the aid of an RP, will accurately read a thermometer in degrees to determine the body's temperature.
The student will explain the relationship between body temperature and the health of a person.		X		-The student will relate the connection between a high fever and what it tells about the health of the patient.
			X	-The student will interview the RP to determine the RP's feelings about an employee that comes to work knowing he/she has a fever.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.2.0: Measurement Tools and Techniques INTEREST AREA MA 2.2.4: How does one accurately measure ingredients when cooking or baking?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will accurately measure ingredients when cooking or baking.	Family living class Home		X	-The student will, with help from an RP, accurately measure the ingredients when cooking and baking.
		X		-The student will measure the proper amount of ingredients when preparing items at home or in a family living class.
		X		-The student's class will have a potluck lunch, each bringing self-prepared foods.
		X		-The LC will bring to class various examples of cooking utensils used for measurement and require the student to practice using these utensils.
			X	-The RP and the student will overview recipes used at the site to note when measurement is required. The RP will assist the student in preparing the recipe.

SUBJECT Mathematics

CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.3.0: Tables and Graphs

INTEREST AREA MA 2.3.1: How does one use a table and graph to locate information?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will determine ways to identify information from a table and graph. The student will construct a graph. The student will construct a table.	Local Newspaper Magazine Article		X	-The student will, with the aid of an RP, locate certain information on a table and graph.
		X		-The student will construct a graph showing the high temperature each day for a week in relationship to the high temperature on the same date of the previous year.
			X	-The student will make a table of the employment figures in a specific job area for the past ten years.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.3.0: Tables and Graphs INTEREST AREA MA 2.3.2: How does one read a pictograph and bar graph?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will construct a bar graph. The student will construct a pictograph. The student will construct a circle graph.	United Fund Campaign sign in a community		X	-The student, with the aid of an RP, will construct a bar graph with five categories when given the raw data concerning attendance, wages, etc.
			X	-The student will research the Rockefeller brothers, find out how much money each is worth and, using a $ to represent an amount of money ($100 million); draw a pictograph.
			X	-The student, with the aid of an RP, will write the factual statements derived from a study of a given circle graph.
			X	-The RP will demonstrate how graphs are used to depict information about the site, i.e. sales, costing, production, etc.
	Continuing Arithmetic Skills pp. 112-114 Webster Division/McGraw-Hill Book Co., St. Louis, Missouri	X		The resource will give the student a reference for constructing bar graphs.
	Continuing Arithmetic Skills p. 134 Webster Division/McGraw-Hill Book Co., St. Louis, Missouri	X		This resource will give the student a reference for reading circle graphs.

SUBJECT Mathematics

CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.3.0: Tables and Graphs

INTEREST AREA MA 2.3.3: How does one read a chart explaining travel schedules?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will read and understand an airplane schedule.	Airport, travel agency		X	-The student will plan a trip to Europe and write up an itinerary complete with departure and arrival times at all the cities he/she wishes to see.
The student will read and understand a bus schedule (both in- and out-of-town).	Bus depot		X	-The student will plan a trip across-town (or cross-country) and develop a time-table with travel routes.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.4.0: Geometric Measurement, Analysis and Construction INTEREST AREA MA 2.4.1: How does one find the perimeter of a rectangle?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will determine the distance along the outside of a rectangle.	Football field or basketball court		X	-The student, with the aid of an RP, will make the least number of measurements to determine the perimeter of a football field in yards.
			X	-The student will find the perimeter of his house (or apartment building).
			X	-The student will determine the perimeter of the work site building.
	Arithmetic That We Need pp. 8-13 Frank Richards Pub. Co. Phoenix, Arizona	X		This resource will show the student how to determine the distance around a given rectangle.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.4.0: Geometric Measurement, Analysis, and Construction INTEREST AREA MA 2.4.2: How does one find the perimeters of triangles and other polygons?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will compute the perimeter of a square.	Educational site		X	-The student, with the aid of an RP, will determine the perimeter of a given item at the site.
The student will determine the perimeter of a triangle.	City block cut diagonally		X	-The student, with the aid of an RP, will determine the perimeter of a triangle that is formed by diagonal markings in a city block in feet.
	Arithmetic That We Need pp. 8-13 Frank Richards Pub. Co. Phoenix, Arizona	X		This resource will show the student how to determine perimeters of squares and triangles.

SUBJECT Mathematics CONCEPT MA 2.0:0: Measurement and Analysis

SUBCONCEPT MA 2.4.0: Geometric Measurement, Analysis and Construction INTEREST AREA MA 2.4.3: What are circles and spheres?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will identify circles and spheres. The student will distinguish between a circle and a sphere.	Art Class		X	-The student will, with the aid of an RP, identify circles and spheres.
		X		-The student will obtain an artist's drawing of the universe (complete with orbits of planets) and discuss with the LC the difference between a true circle and the sphere (represented by the orbits of the planets and the planets themselves).
		X		-The student will do research into the invention and development of the ball bearing, with concentration on its' importance to technology and the striving to achieve the perfect circle.
			X	-The student will observe activities at the site to list when circles and spheres are used.

SUBJECT Mathematics CONCEPT MA 2.0.0: Measurement and Analysis

SUBCONCEPT MA 2.4.0: Geometric Measurement, Analysis and Construction INTEREST AREA MA 2.4.4: How does one find the circumference and area of a circle?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab	Com.	LEARNING ACTIVITY
The student will determine the circumference of a circle. The student will explain the relationship between the circumference of a circle and the radius and diameter of a circle.	Basketball Court		X	-The student, with the aid of an RP, will make the necessary measurements of the circles on the basketball court and compute the circumference of those circles.
			X	-The student will determine the circumference of a round dining room table when given the diameter.
			X	-The student will compute the area of the tires on the cars of friends and relatives.
			X	-The student and the RP will determine the circumference of gears, shafts, etc. that are present on machinery at the site.
	Arithmetic That We Need pp. 8-13 Frank Richards Pub. Co. Phoenix, AZ	X		This resource will show the student how to determine the circle.

SUBJECT Mathematics CONCEPT MA 3.0,0: Applications

SUBCONCEPT MA 3.1.0: Business Applications INTEREST AREA MA 3.1.1: How does one keep an accurate checkbook in relation to deposits, withdrawals, and balances?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will demonstrate an ability for completing a bank form for opening a checking account.	Banks		X	-The student, with the aid of an RP, will overview the form necessary for opening a business checking account.
			X	-The student, with the aid of an RP, will complete a deposit slip for the amount of a given check.
The student will complete a bank deposit for their checking account.	Banks		X	-The student, with the aid of an RP, will complete a personal check for the amount of purchase at a clothing store.
			X	-The RP will explain the information that must be neatly and accurately presented on the check.
The student will complete a personal check for a purchase.	Retail stores		X	-The student, with the aid of an RP, will subtract the amount of each check written for budgeted items from the $469.25 beginning balance.
The student will maintain accurate records for a checking account.	Banks		X	-The student, with the aid of an RP, will accurately complete a checkbook ledger when given the beginning balance, the amounts for checks, the amounts for deposits, and any service charges.
The student will accurately complete a checkbook ledger.	Banks		X	-The student, with the aid of RP, will write voided checks for all budgeted items when given an account balance of $469.25 and a budget.
The student will demonstrate competencies necessary to utilize a checking account.	Banks		X	-The student will, with the aid of an RP, examine the service charge on a monthly bank statement.
			X	-The student, with the aid of an RP, will study a bank statement and practice in reconciling that bank statement.
The student will understand a bank's service charge.	Banks		X	-The student, with the aid of an RP, will practice the proper endorsement and learn about different types of endorsement.
The student will reconcile a bank statement.	Banks-home			

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SUBJECT _____ CONCEPT _____

SUBCONCEPT _____ INTEREST AREA MA 3.1.1: (continued)

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
(continued)				
The student will demonstrate the ability to accurately endorse a check.	Bank-Education, Site-home		X	-The RP will explain the necessity for the presence of endorsements prior to accepting the check.
The student will understand or define banking terms related to a checking account.	Banks, retail business, home		X	-The student, with the aid of an RP, learns the meaning of certain banking terms related to a checking account, such as balance, certified check, currency, personalized, etc.
The student will identify all entries on a bank statement.	Banks		X	-The student, with the aid of an RP, will identify all entries on the statement which correspond to all cancelled checks and deposit slips.
	Mathematics in Living Banking Book II Pruett Publishing Co. Boulder, Colorado	X		This resource will give the student a method for completing a bank form for opening a checking account.
	Mathematics in Living Banking Book III Pruett Publishing Co. Boulder, Colorado	X		This resource will give the student an appropriate method for completing a deposit slip, personal check, checkbook ledger and bank statement entries.
	Useful Arithmetic Volume II - pp. 73-77 Frank Richards Publishing Co. Phoenix, Arizona	X		This resource will give the student an accurate method of maintaining a checking account.
	Everyday Business pp. 1-29 Cal-Central Press Sacramento, California	X		This resource will give the student an appropriate method for establishing and maintaining a checking account.

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SUBJECT _____ CONCEPT _____

SUBCONCEPT _____ INTEREST AREA MA 3.1.1: (continued)

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
	(continued) Mathematics for Banking pp. 78, 83-90, 91-92, 94 Mafex Associates, Inc. Johnstown, PA 15902	X		This resource will help the student in understanding service charges, reconciliation endorsement, terminology.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.1.0: Business Applications INTEREST AREA MA 3.1.2: How does one plan a budget?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will organize the correct data needed to plan a budget. The student will describe the amount of school-related expenses and budget for them. The student will determine the costs and procedure for renting an apartment.	Banks, apartment complex, work site.		X	-The student will list his/her expenses and earnings, and plan a prospective budget using those average figures.
		X		-The student, in discussion with the LC, determines the amount of school-related spending in an average school year. Then, using these figures, plans for future expenditures.
			X	-The student, with the aid of the LC, will investigate apartment sites in the community; finding where they are, their cost and, through discussion with the landlords, find how to best go about obtaining an apartment.
			X	-The RP will give a simplified account explaining the need to maintain the business budget.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.1.0: Business Applications INTEREST AREA MA 3.1.3: How does one fill out federal and state income tax returns?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will describe why citizens are required to file income tax returns.	IRS office Work site Accountant	X		-The student, along with the LC, will research the history of income tax and determine what this tax pays for.
The student will describe ways of keeping accurate tax records.		X		-The student will, if it is applicable, keep a file of deductable expenses, employment forms (W-2) and other expenses that are needed to prepare a tax return.
The student will fill out a federal income tax form.		X		-The student, with the help from the LC, will fill out a practice federal tax return.
The student will fill out a state income tax form.		X		-The student, with the help from the LC, will fill out a practice state income tax form.
			X	-The student will interview the RP to determine and list the types of records and information a business must maintain to complete tax forms.
			X	-The student and the RP will compare the differences in reporting business and individual tax forms.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.1.0: Business Applications INTEREST AREA MA 3.1.4: What are the costs when one joins a union?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will determine the costs when joining a union. The student will describe the benefits a union offers a member in return for its dues.	Local labor union		X	-The student will, with the aid of an RP, determine the costs when joining a particular union.
			X	-The student will discuss, with a co-worker, the cost of joining a union.
			X	-The student will write the office of a national union (with a local in the community) and ask for such information
			X	-The student will, through interviews of the RP or co-workers, determine and list items that may be negotiated for an employee contract.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.1.0: Business Applications INTEREST AREA MA 3.1.5: What are the costs and the procedures for entering school after high school?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will determine the costs and the procedures in entering school after high school.	High School Guidance Counselor Area Community Colleges	X	X	-The student will, with the aid of an RP, determine the costs and procedures in entering school after high school that may be useful in job advancement at the site. -The student will write various colleges and junior colleges and ask for a current catalogue.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.1.0: Business Applications INTEREST AREA MA 3.1.6: How does one compute salary?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will determine that wages are a payment for work.	Experience site		X	-The student will discuss with an employee how they receive pay, why they are paid, etc.
			X	-The student, with the aid of an RP, will compute gross earnings of four employees when given the hourly rate and time worked.
The student will compute a salary when given the hourly wage and time worked.	Industrial sites		X	-The student, with the aid of an RP, will compute net earnings for four employees when the hours, rate of pay, and payroll deductions are given.
The student will compute a weekly salary when daily hours and payroll deduction rates are given.	Industrial sites		X	-The student, with the aid of an RP, will compute the gross earnings of four employees, including overtime pay, when given rates of days and hours worked.
The student will compute gross earnings with overtime pay when hourly rates and times are given.	Industrial sites			
	Arithmetic That We Need pp. 35-40 Frank Richards Pub. Co. Phoenix, Arizona	X		This resource will give the student information needed to determine a salary.
	Useful Arithmetic Volume II - pp. 38-40 Frank Richards Pub. Co. Phoenix, Arizona	X		This resource will give the learner information needed to determine a weekly salary.
	Working Makes Sense pp. 92-98 Fearon Publishers, Inc. Belmont, California	X		This resource will give the student a method for determining overtime pay.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.1.0: Business Applications INTEREST AREA MA 3.1.7: What are the reasons for establishing a savings account and maintaining accurate records?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will demonstrate competencies necessary to utilize a savings account.			X	-The student, with the aid of an RP, will state three reasons for opening and maintaining a savings account.
The student will complete a form necessary for opening a savings account.	Bank Savings and Loan Company		X	-The student, with the aid of an RP, will complete the form necessary for opening a savings account at a bank.
			X	-The student, with the aid of an RP, will complete the form necessary to deposit money in a savings account.
The student learner will complete a deposit form necessary for depositing money to a savings account.	Bank Savings and Loan Company		X	-The student, with the aid of an RP, will compute the amount of money earned on a savings account when given the account balance and the rate of interest for a year's time.
The student will determine earnings on money placed in a savings account.	Bank Savings and Loan Company		X	-Given a beginning balance in a savings account, the student will enter three deposits and three withdrawals in a passbook and accurately record each entry.
The student will make entries in a passbook (savings book).	Bank Savings and Loan Company			
	Everyday Business pp. 30 and 31 Cal-Central Press Sacramento, California	X		This resource will give the student reasons for establishing and maintaining a savings account.
	Mathematics in Living Banking Book II Pruett Publishing Co. Boulder, Colorado	X		This resource will give the student an appropriate method for completing a bank form for opening a savings account.
	Mathematics in Living Banking Book III Pruett Publishing Co. Boulder, Colorado	X		This resource will give the student the correct procedure for completing a deposit form determining interest and making enteries in a savings passbook.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.1.0: Business Applications INTEREST AREA MA 3.1.8: What are the reasons for opening a safe deposit box?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will understand the reasons for having a safe deposit box. The student will determine the cost and location of a safe deposit box. The student will describe what should not be placed in a safe deposit box.	Bank		X	-The student will, with aid from an RP, list reasons for opening a deposit box and what type of items might be kept in the deposit box.
			X	-The student will find, in the community, the location of a safe deposit box. At that location, he/she will determine the cost of the box.
			X	-The student will discuss with a bank officer what things should not be placed in a safe deposit box (the box is sealed in case of death).
	Mathematics for Banking pp. 20-22 Mafex Associates, Inc.	X		This resource will aid the student in determining the reasons for opening a safe deposit box.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.1.0: Business Applications INTEREST AREA MA 3.1.9: How does one take an inventory?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will understand and be able to take an inventory. The student will explain why an inventory is used. The student will define terms used in connection with inventories.	Retail Store		X	-The student, with the aid of an RP, will assist in taking an inventory at a business or retail store.
			X	-The student will discuss with the RP the benefits and purpose of the inventory process.
		X		-The student will define words used in the inventory process (fiscal year, inventory control, stock, quantity, etc.).

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.1.0: Business Applications INTEREST AREA MA 3.1.10: What expenses are involved in starting a chosen hobby?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will determine the costs or expenses when beginning a hobby.	Home Art Class - Family Living Class		X	-The student will, with the aid of an RP, determine the expenses when beginning a hobby by computing the costs over a period of time.
The student will determine what hobbies he/she finds interesting.		X		-The student will choose a hobby to his/her liking and determine how much it would cost to start.
		X		-The student will determine, in discussion with the LC, what hobbies are open to him/her in the community and what the student likes to do in his/her spare time.
			X	-The student will interview three co-workers to determine their hobbies, how they became interested and developed the hobbies, and what expenses were involved.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.2.0: Insurance Applications INTEREST AREA MA 3.2.1: How does one purchase appropriate renter's insurance?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will identify or determine ways to purchase appropriate renter's insurance. The student will describe the reasons why renter's insurance is needed.	Relative, insurance agent		X X	-The student, with the aid of an RP, selects the most appropriate renter's insurance program. -The student will inventory his belongings and place an approximate value of each. He/she should also determine replacement cost of each item.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.2.0: Insurance Applications INTEREST AREA MA 3.2.2: How does one purchase appropriate health insurance?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will identify or determine ways to purchase appropriate health insurance for himself. The student will compute the cost of paying into an appropriate health insurance plan. The student will compare the benefits of a number of health insurance programs.	Health insurance representatives		X X X	-The student will, with the aid of an RP, list three reasons for purchasing health insurance. -The student will discuss with the RP total cost of subscribing to a particular health insurance program for the employees at the site. -The student will collect information on a number of health insurance programs, compare this information from program to program, and make a decision on which would be best for him/her.
	Everyday Business pp. 77-85 Cal-Central Press Sacramento, California	X		This resource will give the student a reference for purchasing suitable health insurance.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.2.0: Insurance Applications INTEREST AREA MA 3.2.3: How does one purchase appropriate home owner's insurance?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will identify or determine ways to purchase appropriate home owners' insurance. The student will select the home owners' insurance that is most advantageous in cost and benefits.	Home Owners' Insurance		X	-The student will, with the aid of an RP, select the most appropriate home owners' insurance.
			X	-The student will research a number of home owner's insurance policies and, based on cost and benefits, and availability, will select an appropriate company policy. The LC will provide a reputable insurance man to the student to be used as a resource.
	Everyday Business pp. 77-85 Cal-Central Press Sacramento, California	X		This resource will give the student a reference for purchasing suitable home owners' insurance.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.2.0: Insurance Applications INTEREST AREA MA 3.2.4: How does one purchase appropriate life insurance?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will identify or determine ways to purchase appropriate life insurance. The student will compare various life insurance companies' policies on their cost and benefits.	Life Insurance Company Representative		X	-The student, with the aid of an RP, will select either term life insurance, or a 20-year paid insurance as presented by a life insurance representative.
			X	-The student will research various life insurance policies, compare prices and expenses and benefits, and make a decision concerning which one to buy into.
			X	-The RP will describe the life insurance policy that is purchased by the business for the employees.
	Everyday Business pp. 77-85 Cal-Central Press Sacremento, California	X		This resource will give the student a reference for purchasing suitable life insurance.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.2.0: Insurance Applications INTEREST AREA MA 3.2.5: How does one purchase appropriate auto insurance?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will identify or determine ways to purchase auto insurance. The student will compare prices of various auto insurance policies.	Auto insurance representative		X	-The student will state the meaning of each of the following coverages: bodily injury, property damage, comprehensive and collision insurance.
			X	-The student will compute the costs of locally available auto policies and make a decision on which policy gives the best coverage for the least price.
		X		-The student, with help from the librarian, will check in back issues of consumer magazines to locate articles that compare a number of auto insurance companies.
	Everyday Business Cal-Central Press Sacramento, California	X		This resource will give the student a reference for buying appropriate auto insurance.

SUBJECT Mathematics

CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.3.0: Transportation Applications

INTEREST AREA MA 3.3.1: How does one plan a trip?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will compute the costs of a trip using various modes of transportation. The student will budget a trip on a fixed amount of money.	Library Travel Agent	X X	 X	-The student will list geographic locations and, using travel chart, ship, train, bus and plane fares; estimate the cost of the total trip (including accommodations and food). -The student, given $400.00, will plan where he/she would go, the mode of transportation, and how much money would be spent on each element of the trip. -The student will make a list of the items to be considered in planning a trip. The RP is asked to overview the list and make any necessary deletions or additions.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.3.0: Transportation Applications INTEREST AREA MA 3.3.2: How does one determine the correct type of gasoline to buy and calculate gasoline mileage?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will identify and determine the correct brand, type, and cost of gasoline when at a gas station.	Gas station		X	-The student will, with the aid of an RP, identify and determine what brand, type, and cost of gasoline when purchasing that product at a gas station.
The student will operate a self-service gasoline pump.			X	-The student will go to a self-service gasoline pump and operate the pump to fill an auto's gas tank or to put a prescribed amount of moneys' worth of gas into the tank.
The student will purchase gasoline which is most suitable for his needs.			X	-The student, with the aid of an RP, will make one purchase of gasoline at a full service station and one purchase at a self-service station and compute the difference in cost for the gasoline and state the difference in service.
The student will compute the miles per gallon when on a trip.	Vacation Period Short trip		X	-The student, when traveling with his parents or a friend, will compute the miles per gallon of gas from station to station.
The student will compute the miles per gallon driven in a car.	Service Station		X	-The student will, with the aid of an RP, compute the miles per gallon of gas involving the entire trip, destination, and return home.
The student will compute the miles per gallon when on a trip.	Short trip - vacation		X	-The student, with the aid of an RP, will compute the miles per gallon of gasoline when given the number of miles driven and the number of gallons used in a full size car and a compact car.
			X	-The student, when traveling with his parents or a friend, will compute the miles per gallon of gas from station to station.
			X	-The student will also compute the miles per gallon of gas involving the entire trip, destination and return.
			X	-The RP and the student will overview mileage records maintained by employees. The student will use estimated mileage per gallon on large and compact cars to determine if the paid mileage rate covers the cost of the gasoline.
	(continued on next page)			

SUBJECT _____ CONCEPT _____

SUBCONCEPT _____ INTEREST AREA MA 3.3.2: (continued)

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
	(continued) Working Makes Sense Teacon Publishers, Inc. Belmont, CA	X		This resource will give the student a reference for determining appropriate gasoline purchases and determining miles per gallon of gasoline used while driving.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.3.0: Transportation Applications INTEREST AREA MA 3.3.3: How does one purchase travelers checks?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will purchase travelers checks. The student will describe the advantages of using travelers checks. The student will compute the cost or the fee to buy travelers checks.	Banks		X	-The student will, with the aid of an RP, successfully purchase travelers checks from a local bank.
			X	-The student, in discussion with the LC, will explain why carrying travelers checks on a trip is safer than carrying cash.
		X		-The student will compute the fee to buy $300.00 worth of travelers checks.
	Mathematics for Banking pp. 10-18 Mafex Associates, Inc.	X		This resource will give the student information and the procedures in purchasing travelers checks.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.3.0: Transportation Applications INTEREST AREA MA 3.3.4: How does one determine the costs for operating a car for one week, month?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will identify the basic costs in operating a car for one week, month.	Service Station Automotive Repair Shop		X	-The student, with the aid of an RP, will make a list of the most common operating costs for company vehicles and compute their prices for one week, month.
			X	-The student will figure the per month cost of insurance for company cars paid twice a year.
			X	-The student will keep accurate records of auto-related costs for one month and use those records to estimate future costs: Depreciation, insurance, gas, oil, maintenance.
			X	-The student will interview the RP to determine how the business budgets for operation of the company cars.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.4.0: Purchasing Behavior and Skills INTEREST AREA MA 3.4.1: How does one make correct change of money?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will add 3 digit numbers in dollars and cents.	Retail store		X	-The student, with the aid of an RP, will add sums of money up to 3 digits with two, three, and four entries.
The student will develop a working vocabulary for counting change for a customer.	Concession stand sponsored by the work study class		X	-The student, with the aid of an RP, will appropriately count change for a customer when given a $5.00 bill for the purchase of a 25 cent drink.
The student will make change.			X	-The student, with the aid of an RP, will make change for two and ten dollars with a purchase price of $1.75 and $3.50 using the fewest number of coins.
The student will count in paper currency amounts to $100.00.	Banks		X	-The student, with the aid of an RP, will name and count paper currency to $100.00.
The student will count in coins amounts to $10.00.			X	-The student, with the aid of an RP, will count coins to make $10.00.
The student will identify the names of coins and paper money to $100.00.			X	-The student, with the aid of an RP, will name all coins and paper money up to $100.00.
	Mathematics in Living Banking Book Three Pruett Publishing Co. Boulder, Colorado	X		This resource will give the student a method for adding money correctly.
	Mathematics for Employment Part I - pp. 101-104,112-137 105-107 Mafex Associates, Inc. 90 Cherry Street Johnstown, PA 15902	X		This resource will give the student a working vocabulary for counting change, a method for counting paper currency and coins, coin and currency identification.
	Useful Arithmetic Volume II - p. 1-8 Frank Richards Publishing Co. Phoenix, AZ	X		This resource will give the student the method for correctly making change.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.4.0: Purchasing behavior and Skills INTEREST AREA MA 3.4.2: How does one compare prices?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will find the difference between two sums of money having up to three digits.	Retail Store		X	-The student, with the aid of an RP, will find the difference in prices of two given items.
			X	-The student will, with the aid of an RP, select the most economical item from two given items.
The student will select the most economical item from two or more items.	Grocery		X	-The student, with the aid of an RP, will develop the ability to observe price markings such as tags, ads, service bills, receipts, etc.
			X	-The student, with the aid of an RP, will make purchases of grocery items suitable for a picnic for four people on a budget of $15.00.
The student will determine purchases by reading price markings.	Grocery	X	X	-The student will visit with the family living teacher concerning selected buying procedures, why items were purchased, certain brands, etc.
The student will make appropriate purchases of food and grocery items.	Grocery		X	-The student will report his experience from a trip to a grocery store.
The student will determine purchases by reading price markings.	Grocery			
The student will develop the ability to purchase selectively.	Grocery			
	Mathematics in Living Banking Book III Pruett Publishing Co. Boulder, Colorado	X		This resource will give the student the method of finding price differences.
	(continued on next page)			

SUBJECT _____ CONCEPT _____

SUBCONCEPT _____ INTEREST AREA MA 3.4.2: (continued)

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
	(continued)			
	Mathematics in Living Book I - PP. 73-92 Pruett Publishing Co. Boulder, Colorado	X		This resource will give the student information on how to make economical selections.
	Everyday Business pp. 45-59 Cal-Central Press Sacramento, California	X		This resource will give the student a reference for methods of appropriate purchases of groceries.

SUBJECT Mathematics

CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.4.0: Purchasing Behavior and Skills

INTEREST AREA MA 3.4.3: What do some commonly-used business and commercial terms mean?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will define the following business and commercial terms: gross, net, profit, loss, selling, price, cost, discount, successive discounts, prorate, compound interest, mileage, tax exemption, debit and credit.	Library Classroom	X X	 X	-The student will write a short story using the terms. -The student will construct a handbook defining these terms so that other students going out on the job will be prepared. -The student will ask the RP to define the terms as they apply to the site.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.4.0: Purchasing Behavior and Skills INTEREST AREA MA 3.4.4: How does one decide when to make a major purchase?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will explain how to finance a major purchase. The student will determine when is a good time to make a major purchase.	Banks Retail stores Savings & Loans	 X	X X	-The student will explain how best to buy a refrigerator - using savings, borrowing from a lending institution or paying installment loan payments to the retailer. -The student will discuss, along with the LC, when a person is in a good enough financial position so that he/she would not over-extend themselves. -The student and the RP will discuss the distinction between luxury and necessity items. The LC may elaborate by illustrating how personal values may change with age.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.4.0: Purchasing Behavior and Skills INTEREST AREA MA 3.4.5: How does one utilize shopping coupons when purchasing items in a store?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will describe where coupons can be found. The student will describe how to use shopping coupons in a retail outlet.	Food Store		X X	-The student will collect a number of shopping coupons from various sources (newspapers, flyers, magazines, direct-mailings, etc.) -The student will go on a shopping trip and use coupons to purchase needed items.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.4.0: Purchasing Behavior and Skills INTEREST AREA MA 3.4.6: How does one compute sales taxes?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will describe the programs and benefits that sales taxes finance.	Retail Stores		X	-The student will research how sales taxes add to the state's treasury and what they finance.
		X		-The student will compute the sales tax on a clothing purchase.
The student will compute the sales tax on a purchase.		X		-The student will compute the sales tax on a major purchase (car, furniture, etc.).
			X	-The RP will explain the need for a tax license, reporting procedures and method of collection (i.e. Iowa tax is three cents on the dollar, but the clerk must know when to add one more cent).

SUBJECT Mathematics

CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.4.0: Purchasing Behavior and Skills

INTEREST AREA MA 3.4.7: How can one discover fallacies in consumer advertising?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will explain some common fake advertising schemes. The student will explain how one can avoid false advertising schemes.	State and federal agencies		X	-The student will do research into various advertising schemes (the Consumer Protection Agency has many publications on the subject and newspapers carry many stories on the subject also).
			X	-The student will develop a strategy of dealing with suspected consumer advertising schemes.
			X	-The student will collect samples of advertising from the site and ask the RP to explain the advertising policies of the site.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.4.0: Purchasing Behavior and Skills INTEREST AREA MA 3.4.8: Why and how are sales slips completed?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will explain why sales slips are used.	Retail establishments		X	-The student, in discussion with the RP, will determine why sales slips are used (carbons used for bookkeeping, inventory, etc.).
The student will complete a sales slip for a department store.			X	-The student will list items on the experience site sales form, find the sub-total, add appropriate sales tax and find the total.
The student will complete a sales slip for a drug store.			X	-The student will list items purchased in a drug store, total all items, add correct sales tax and find a grand total.
The student will complete a sales slip for a dry-cleaning operation.			X	-The student will list items cleaned, their costs sub-total the costs, add the correct sales tax and find the total.
The student will complete a sales slip for a restaurant.			X	-The student will list costs of food eaten, sub-total the costs, add appropriate sales tax and find a total of the bill.

SUBJECT Mathematics

CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.4.0: Purchasing Behavior and Skills

INTEREST AREA MA 3.4.9: How does one find the cost of one or more purchased items?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will correctly compute the total cost of a given number of purchases.	Grocery		X	-The student, with the aid of an RP, will find the total amount of money for ten items sold by the site.
			X	-The student will find the total cost of supplies needed to operate the site for two days.
The student will determine the cost of a given item including sales tax or miscellaneous charges.	Retail stores		X	-The student, with the aid of an RP, will determine the cost of a given item that would include an additional charge such as service charge, sales tax, etc.
The student will identify the cost of an item when it is priced in groups.	Retail stores		X	-The student, with the aid of an RP, will compute the cost of one item that is priced in a group of items when given the cost of the group.
	Useful Arithmetic Volume II - pp. 19-30 Frank Richards Publishing Co. Phoenix, Arizona	X		This resource will give the student the method of computing totals for a given number of purchases.
	Mathematics in Living Book I - pp. 125-137 Pruett Publishing Co. Boulder, Colorado	X		This resource will give the student the correct method for determining the cost of single items priced in groups.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.4.0: Purchasing Behavior and Skills INTEREST AREA MA 3.4.10: How does one make appropriate clothing purchases?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will make appropriate purchases of clothing items. The student will explain the difference between fads in fashion and clothing that goes beyond fad. The student will explain the relationship between price and durability. The student will describe the characteristics of well-made clothes.	Clothing stores		X	-The student will talk to the RP to determine what things to look for in clothing for the site.
			X	-The student, with the aid of an RP, will make purchases of clothing suitable for working at the site.
			X	-The student, given a list of clothing recommended for the site, will determine which style of clothing will weather the test of time.
		X		-The student, in discussion with the LC, will explain the reasons why it may be advantageous to spend more money on certain types of clothing than others.
	Everyday Business pp. 45-59 Cal-Central Press Sacramento, California	X		This resource will give the student a reference for methods of appropriate purchase of clothing.

SUBJECT Mathematics

CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.4.0: Purchasing Behavior and Skills

INTEREST AREA MA 3.4.11: How does one translate dollars and cents written in words into numerals?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will translate dollars and cents written in words into numbers. The student will write the amount of a check in both words and numerals. The student will spell correctly the word symbols of most-used numerals.			X	-The student, with the aid of an RP, will cover the numbers on cancelled checks and translate the amounts written in words to numbers.
		X		-The student will complete a series of check writing exercises, writing the amount of the purchased item in words and numerals.
		X		-The student will be tested in spelling the numerals, one through nine, and numerals ten through one hundred (by tens).
	Mathematics in Living Banking Book III Pruett Publishing Co. Boulder, Colorado	X		This resource will provide the student with information needed to translate words into numerals.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.4.0: Purchasing Behavior and Skills INTEREST AREA MA 3.4.12: How does one express numerical value by written words?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will identify numerical value by written words.	Banks--cancelled checks		X	-The student, with the aid of an RP, will cover the values on cancelled checks written in words, then write the numerical value in words.
		X		-The student will write the word-equivalent of numerals.
	Useful Arithmetic Volume II - pp. 9-10 Frank Richards Publishing Co. Phoenix, Arizona	X		This resource will give the student information on translation of numerical values to written words.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.4.0: Purchasing Behavior and Skills INTEREST AREA MA 3.4.13: How does one fill out a catalog order blank?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will correctly fill out and order items concerning a catalog order blank. The student will compute the amount to be paid when filling out a catalog order blank.	Catalog sales store		X	-The student, with the aid of an RP, will accurately complete a catalog order blank, including item ordered. The RP will demonstrate the information needed to insure the correct supplies required by the site.
			X	-The student will order a set of camping equipment, total the order blank (figuring sales tax, if applicable), shipping charges and correctly fill out name and address.
	Fill In The Blanks pp. 31-38 Mafex Associates, Inc. 90 Cherry Street Johnstown, PA 15902	X		This resource will give the student information and illustrations in completing a catalog order form.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.5.0: Making Purchases for the Home INTEREST AREA MA 3.5.1: How does one pay utility bills?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will determine the different methods in paying utility bills. The student will explain the advantage of paying utility bills on time.	Bank		X	-The student will, with the aid of an RP, develop the basic methods in paying their utility bills.
		X		-The RP will explain methods of paying utility bills (check, cash-with receipt, mailing, direct payment, etc.), and tell how the utilities are paid for at the site.
		X		-The student will explain, in discussion with the RP, the disadvantages and advantages of paying utility bills on time.
	Mathematics for Banking p. 9 Mafex Associates, Inc. 90 Cherry Street Johnstown, PA 15902	X		This resource will show the student different methods in paying their utility bills.

SUBJECT Mathematics

CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.5.0: Making Purchases for the Home

INTEREST AREA MA 3.5.2: How does one furnish an apartment?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will determine the costs to furnish an apartment. The student will describe various furniture outlets and compare them. The student will describe some simple furniture repair techniques.	Family Living Class Home		X	-The student will, with the aid of an RP, determine the costs of furnishing an apartment.
		X		-The student will describe used furniture outlets, department stores, furniture stores that sell furniture exclusively, and stores that sell unfinished or kit furniture. The student will compare them in terms of cost and quality.
	Shop class	X		-The student will describe how to: glue a joint, repair and patch a rip in fabric, glue a leg and replace or repair a tuft or a button in an upholstered item.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.5.0: Making Purchases for the Home INTEREST AREA MA 3.5.3: What costs are involved in home improvements?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will figure the cost of a particular home improvement. The student will list, describe and tell uses of commonly used tools. The student will estimate the costs of home improvements.	Finance companies Bank	 X 	X X	-The student, with the aid of an RP, will figure the costs that are involved in a particular home improvement. -The student will describe and tell the uses of the following: hammer, saw, measuring tape, sander, drill, plane, level, etc. -The student, using a local lumber store retailer, will estimate the cost of adding a closet in his/her bedroom.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.5.0: Making Purchases for the Home INTEREST AREA MA 3.5.4: How does one figure the cost of insulating a room, apartment or house?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will figure the costs of insulating a room or an apartment. The student will obtain government and industrial brochures on insulation.	Lumber store Cas and Electric Company Industrial Arts class		X X	-The student, with the aid of an RP, will compute the costs when insulating a room or an apartment. -The student will find sources of information on how to insulate his/her dwelling from the federal and state government, national companies and local sources of information.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.6.0: Loans, Investment Buying and Using Credit Cards INTEREST AREA MA 3.6.1: How does one figure compound interest, interest to be paid, finance charges and total cost of item purchased on installment buying?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will compute a problem involving compound interest.	Banks Classroom Savings and loan	X		-The student will compute the interest on his own savings account (or invented savings account), given that he/she puts in a central amount each month.
The student will evaluate the consequences of placing money in a savings account.			X	-The student will discuss with the RP how one actually loses money when it is placed in a savings account (based on real money vs. inflated money).
The student will define installment buying and describe an example.			X	-The student, with the aid of an RP, will compute the total cost of equipment needed at the site that is financed at a bank, when given the necessary information.
The student will compute the cost of an item via the installment plan.	Retail stores		X	-The student, in discussion with the RP, will produce a list of advantages in installment buying and a list of disadvantages as installment buying relates to the site.
The student will describe the advantages and disadvantages of buying on the installment plan.		X		-The student will compute the finance charges on the purchase price of a major appliance. A reputable appliance store can be the source for this information.
The student will compute finance charges on an item that has been purchased.		X		-The student will compute the interest charges on an installment loan from a lending institution on a used auto.
The student will compute the interest charges on an item purchased.			X	-The student and the RP will discuss the various lending rates comparing business to private individual loans.
	(continued on next page)			

SUBJECT _____ CONCEPT _____

SUBCONCEPT _____ INTEREST AREA MA 3.6.1: (continued)

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
	(continued) Mathematics in Living Book I - pp. 111-124 Pruett Publishing Co. Boulder, Colorado	X		This resource will give the student the correct method to compute cost of an item on an installment plan.

SUBJECT Mathematics

CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3,6,0: Loans, Investment Buying and Using Credit Cards

INTEREST AREA MA 3.6.2: What are the procedures in obtaining a loan?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will describe the procedures in obtaining a loan.			X	-The student will discuss with the RP various lending institutions and determine how each handles the application for a loan.
The student will compute interest and finance charges.		X	X	-The student will compute the total cost of an identical loan at the previously researched institutions and evaluate the results.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.6.0: Loans, Investment Buying and Using Credit Cards INTEREST AREA MA 3.6.3: How does one apply for credit cards, and maintain a record of credit card obligations?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will apply for a credit card.	Bank		X	-The student will, with the aid of an RP, apply for various credit cards, such as Mastercharge, Amoco, etc.
The student will explain the contract on the reverse side of the credit card application.		X		-The student will explain, in discussion with the LC, the standard contract that most credit card companies follow.
The student will compute interest charges of credit card purchases.		X		-The student will compute the interest charge on a purchase of $30.00, if the student pays $5.00 a month.
			X	-The student will interview the RP to determine the experience site policies for handling credit cards.
The student will demonstrate an ability to do the computations necessary to maintain appropriate records of credit obligations.			X	-The student, with the aid of an RP, will record credit obligations on a form when given due dates.
			X	-The student will discuss with the LC an imaginary case of using too many credit cards or charge accounts, and explain how one can avoid such pitfalls.
The student will describe how someone may become overextended when using credit.				
The student will describe what information is needed when keeping credit records.			X	-The student will obtain a sample credit balance sheet and determine what information would be needed to double-check the figures.
	Fill in the Blanks pp. 39-44 Mafex Associates, Inc. 90 Cherry Street Johnstown, PA 15902	X		This resource will give the student information to proper steps to apply for credit cards.
	Mathematics in Living Book 4 - pp. 1-14 Credit Loans & Taxes Pruett Publishing Co. Boulder, Colorado	X		This resource will give the student a method for maintaining appropriate records of credit obligations.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.7.0: General Consumer Math Applications INTEREST AREA MA 3.7.1: How does one plan personal investments?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will give examples of different kinds of personal investments. The student will explain how much to invest in these ventures.	Bank Stockbroker Real Estate Agent	X	 X	-The student will do research into personal investments and discuss with the LC which appears more attractive (stocks, government bonds, real estate, municipal bonds, etc.). -The student will discuss with a banker or stock broker what percentage of one's income should be invested.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.7.0: General Consumer Math Applications INTEREST AREA MA 3.7.2: How does one purchase a money order?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will complete the form to obtain a money order. The student will explain the advantages of purchasing a money order.	Post Office		X	-The student, with the aid of an RP, will relate his needs for a $10.00 money order to a postal clerk.
		X		-The student will, in discussion with the LC, explain why money orders are advantageous (safety, etc.).
			X	-The RP will explain how businesses use cashier's checks to transfer money to another business.
	Everyday Business pp. 34-35	X		This resource will give the student information needed to get a money order.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.7.0: General Consumer Math Applications INTEREST AREA MA 3.7.3: How does one determine the amount of postage for an item?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will determine the amount of postage required for an item. The student will explain terms that are used in handling special pieces of mail.	Post Office		X	-The student, with the aid of an RP, will determine the postal class of 12 items of mail when given class information and the items.
		X		-The student will explain the following terms: registered mail, special delivery, etc.
			X	-The student will go through the procedures to mail a registered letter and to mail a special delivery letter.
			X	-The student will interview the RP and list the mailing policies established for the site. The LC and the student will develop the questionnaire so as to cover mailing permits and bulk rates, etc.
	Useful Arithmetic Volume II - p. 15-18 Frank Richards Publishing Co. Phoenix, Arizona	X		This resource will give the student information necessary to determine correct postage for a given item.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.7.0: General Consumer Math Applications INTEREST AREA MA 3.7.4: How does one purchase class rings and senior pictures or graduation announcements?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will accurately purchase (their) senior class pictures.	Educational site Photo Guide	X		-The student, with the aid of the LC, will figure the costs and complete the necessary steps in purchasing senior class pictures.
			X	-The RP will describe the pictures that are most appropriate for a job application.
The student will identify the costs when ordering graduation announcements.	Home Family Living Class	X		-The student will, with the aid of the LC, determine the basic costs when ordering graduation announcements.
The student will select and purchase a high school class ring.	Educational site Ring Salesman		X	-The student will ask the RP to describe the kinds of information most often present in announcements of business affairs. The student and the LC can compare this information to the items the student has ordered to see if all needed facts will be covered in the announcement, i.e. student name cards, etc.
			X	-The student will, with the aid of the LC, select and figure the purchase price of a high school class ring.
			X	-The RP will explain safety factors that must be observed at the site when one is wearing jewelry.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.8.0: Scientific and Technical Applications INTEREST AREA MA 3.8.1: How does one calculate distance on maps and scale drawings?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY
The student will calculate distance on maps and scale drawings.	City map County directory		X	-The student will, with the aid of an RP, calculate distance on maps and scale drawings.
		X		-The student will compute the distance traveled on a vacation trip by measuring the distance between two points and calculating the distance to scale.
			X	-The RP will use old travel plans of employees to assist the student in calculating the total distance traveled by an employee in a period of one week.

SUBJECT Mathematics CONCEPT MA 3.0.0: Applications

SUBCONCEPT MA 3.8.0: Scientific and Technical Applications INTEREST AREA MA 3.8.2: How does one read blueprints and maps?

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab	Com	LEARNING ACTIVITY
The student will read blueprints and maps. The student will read a house floor plan.	City Hall		X	-The student will, with the aid of an RP, read blueprints and maps.
		X		-The student will read a floor plan for a home and determine the size of his/her room.
			X	-The RP will explain how blueprints are used at the site and demonstrate how to read the necessary facts depicted on the blueprint.

SUBJECT _____ CONCEPT _____

SUBCONCEPT _____ INTEREST AREA _____

INSTRUCTIONAL OBJECTIVES	RESOURCE	Lab.	Com.	LEARNING ACTIVITY